

REMARKS

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

Status of the claims

Claims 26-52 were pending in the subject case, although claims 41-52 had been withdrawn from consideration by the Examiner. With this submission, claims 26, 27, 28, and 41 have been amended; claims 31, 32, and 34-37 have been cancelled; and claims 53-56 have been newly added.

Hence, upon entry of this paper, claims 26-30, 33, and 38-56 will remain pending with claims 41-42 withdrawn from active consideration.

Rejection under 35 U.S.C. § 112, second paragraph

Claim 27 stands rejected under 35 U.S.C. 112, second paragraph, as being indefinite for reciting both a broad and narrow limitation together in a claim. Applicants have deleted the phrase “preferably covalently” from claim 27, which amendment should overcome the rejection.

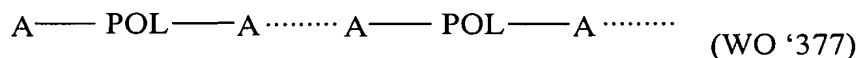
Rejection under 35 U.S.C. § 102

WO 02/098377

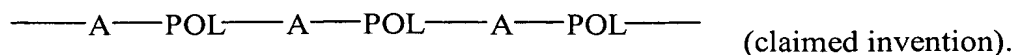
Claims 26-40 stand rejected under 35 U.S.C. 102(b) as being allegedly anticipated by WO 02/098377 (WO ‘377). The Examiner alleges that the claimed supramolecular polymers can be found in the noted sections of the reference. Applicants respectfully traverse the rejection.

The polymers according to the present invention, as amended, have a structure different from the polymers disclosed in WO ‘377. First, the structure of the polymers according to the present invention is $-[A-POL]_n-$ wherein the groups “A” are incorporated via two covalent bonds to the polymer backbone “POL”. The structures of WO ‘377, however, comprise groups A within the polymeric chain that are not similarly linked to polymeric chains by covalent bonds.

This difference may be illustrated graphically as follows, wherein only “ — ” represents a covalent bond:



versus



Indeed, WO '377 discloses a polymer comprising at least two repeating patterns and at least two binding groups A which occur *sidewise* in the polymeric chain or at the termini of the polymeric chain. *See* page 6, lines 24 – 35 of WO '377 and [0044] – [0048] of corresponding US 2004/0161394. The term “sidewise” is defined such that the groups A are grafted onto the polymeric chain and not that these groups A are alternately coupled with polymeric chains. *See* page 8, lines 19 – 29 of WO '377 and [0064] of US 2004/0161394 (disclosing that the polymer may comprise at least two groups A within the chain according to the formula A-POL-A-A or A-A-POL-A.) The molecular structure of the resulting polymers is shown in more detail on page 14, lines 1 – 5 of WO '377 and [0097] of US 2004/0161394.

Hence, WO '377 actually teaches combinations of polymers A-POL-A, wherein two *terminal* 4H-units of different A-POL-A species form a dimeric structure, such as A-POL-A-A-POL-A. *See* WO '377 at page 9, lines 11 – 12 and [0070] – [0072] of US 2004/0161394. Nowhere does WO '377 teach a polymer -A-POL-A-POL-A-POL-.

Additionally, when the groups A are 4H units, the latter are bonded via a single covalent linkage to the polymer chain. *See* page 14, lines 1 – 6 of WO '377 and [0097] of US 2004/0161394. Indeed, the 4H units are either linked to the polymeric chain via only the ureido group (akin to R1 in Formula VI(a) of the present invention) or the pyrimidone group (akin to R2 in Formula VI(a) of the present invention). *See* page 14, lines 1 – 5, page 19, lines 1 – 8 and Examples 1 – 3 of WO '377. However, in the polymers according to the present invention, the 4H units are linked by two covalent bonds via both R1 and R3.

To make these distinctions clear, the claims have been amended to recite the proviso that “the 4H-units are incorporated in the polymer backbone by two covalent bonds.” Thus, WO ‘377 cannot anticipate the present claims.

Guan or US 6,320,018

Claims 26 and 28 stand rejected under the same statute as being allegedly anticipated by Guan et al., “Modular Domain Structure...,” JACS (2004) 126: 2058 (“Guan”) or US 6,320,018 (“Sijbesma”). Applicants respectfully disagree.

Guan is not prior art. The Guan reference published on the web January 29, 2004, whereas the present application is a “national phase” filing of a PCT application filed November 4, 2003.

Sybesma discloses polymers having 4H units at their termini. Sybesma does not disclose polymers having 4H units in the polymeric chain which are incorporated by two covalent bonds. See also all examples describing the synthesis of the polymers: Example I to Example XVI, on page 6, line 20 – page 20 line 64. Moreover, in all the examples describing molecules with two 4H-units, the 4H-units are linked with only one chemical bond: via the ureido for Example VII and VIII (R1), and via the 6-position for Example XII, XIII, and XVI (R2), wherein R1 and R2 are akin to Formula VI(a) of the present application.

Taken together, Applicants respectfully submit that none of the cited references properly anticipate the amended claims. Hence, withdrawal of the present rejections is respectfully requested.

Rejections under 35 U.S.C. § 103

Claims 27, and 29-40 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Sijbesma. Applicants respectfully disagree.

It is axiomatic that in order to establish a *prima facie* case of obviousness, a single prior art reference or a combination of references must teach or suggest each and every claim feature of the claimed invention. Applicants respectfully submit that the proposed

combination of references does not satisfy at least this requirement. None of the cited references, either alone or in combination, teaches the polymers of the structure claimed.

Therefore, Applicants respectfully submit that the combination of cited references cannot render any of the pending claims obvious. Withdrawal of subject rejection is respectfully solicited.

Conclusion

Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested. The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing or a credit card payment form being unsigned, providing incorrect information resulting in a rejected credit card transaction, or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicants hereby petition for such extension under 37 C.F.R. §1.136 and authorize payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

By 

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